

Minutes from the August 15, 2001 MSFC PMC

Prepared by VS10/Rich Gladwin

Art Stephenson chaired the meeting. Rich Gladwin reviewed the agenda and gave a status of open actions. Two presentations were made to the PMC: (1) SSME Advanced Health Management System (AHMS) Implementation Readiness and (2) Independent Assessment of SSME AHMS by the Independent Program Assessment Office (IPAO).

Jeff Spencer presented the first topic, SSME Advanced Health Management System (AHMS) Phase II Implementation Readiness. The purpose of Mr. Spencer's presentation was to request the PMCs endorsement to proceed into the implementation phase. Mr. Spencer presented the AHMS Phase 2 project overview, which included a brief description of the Phase I AHMS. Mr. Stephenson asked about the Phase I AHMS schedule. Mr. Spencer responded that the first flight was scheduled for the spring of 2004 and that a flight experiment had been flown to demonstrate data collection and data digitization capability. Mr. Stephenson assigned an action to clarify the benefits of the Phase 1 AHMS.

ACTION 1:

Assigned to: MP21/Jeff Spencer

Action: Update the presentation material to clarify the benefits and capabilities of the Phase 1 AHMS. Clearly state that the Phase I AHMS provides additional data, which results in more accurate engine shutdown capability. Update the presentation package prior to briefing JSC. Forward a copy of the updated chart to the PMC secretariat to close the action.

Due Date: 8/22/01

Next, Mr. Spencer briefed the council on the benefits of the AHMS Phase 2. Mr. Kilpatrick questioned why engines are throttled down to 67% when AHMS detects a degraded engine. The project team responded that 67% was the lowest power level allowed by the current requirements and that the project had a significant amount of test and flight data at the 67% power level. Mr. Spencer presented test data from the AHMS Phase 2 concept of operations. The test demonstrated a successful throttle down to 80% after the turbine discharge temperature redline was exceeded. Mr. Stephenson asked how AHMS could have mitigated a condition like the pin leak that occurred during the Chandra mission. Mr. Spencer responded that AHMS could have adjusted the oxygen/fuel ratio to avoid the early engine cutoff. Mr. Kennedy asked if Stennis would require any facility modifications. Mr. Spencer responded that nothing has to be changed for the flight system. After Mr. Spencer presented the project management structure, Mr. Kennedy asked if the project had encountered any problems by using two prime contractors (Rocketdyne and USA). Mr. Spencer responded that contractor roles have been clearly defined and that there had not been any problems. Mr. Spencer presented the project's Work Breakdown Structure (WBS). Mr. Stephenson questioned why the test program at Stennis was not included. Mr. Spencer responded that the Stennis test program was included in the mainline SSME project.

Mr. Spencer presented the Phase 2 AHMS cost summary, which totaled \$179 million with 25% reserve included. This was substantially higher than the November 1999 ROM estimate that the project had provided. Mr. Spencer noted that the 1999 estimates were very early, rough ROM prior to any type of formulation activity. Mr. Stephenson was very concerned that JSC and NASA HQ would use the low 1999 cost estimate as justification to not fund implementation of AHMS Phase 2.

Finding / Lessons Learned: *Mr. Stephenson stated that MSFC must protect its credibility by providing conservative cost estimates. Ground rules and caveats to cost estimates do not protect the project or the Center because they are quickly separated from the bottom line number. Mr. Stephenson stated that if large uncertainties exist in the cost estimate, projects should consider adding a 2X or 3X factor to the ROM.*

Mr. Stephenson asked that the project consider descope options, which could be accomplished more in line with the 1999 ROM cost estimate. Mr. Stephenson indicated he would contact Mr. Dittmore and/or NASA HQ to determine their preferred course of action (i.e. consider descope options for the AHMS Phase 2 or implement the AHMS Phase 2 as currently proposed by the project).

ACTION 2:

Assigned to: MP21/Jeff Spencer

Action: Consider descope options to reduce cost of AMHS Phase 2. Brief the PMC with the results of this investigation, before requesting implementation from JSC.

Due Date: 12/20/01

Next David Beals of NASA's Independent Program Assessment Office, presented an independent assessment of SSME AHMS Phase 2. The independent assessment confirmed the safety benefits of AHMS and the independent cost estimate validated the project's current cost estimate. The independent assessment concluded that the AHMS Phase 2 had made good progress during formulation and that all technical issues were being identified and worked. Mr. Stephenson assigned an action for the project and IPAO to provide a single chart, which describes in simple language, the benefits of AHMS Phase 2.

ACTION 3:

Assigned to: MP21/Jeff Spencer and LRC/David Beals

Action: Prepare a single chart for Mr. Stephenson, which describes the safety benefits of AHMS Phase 2 in simple terms. The chart should combine both project and IPAO information.

Due Date: 08/22/01

Mr. Stephenson inquired about the safety benefits of the SRB project upgrade, Advanced Thrust Vector Control (ATVC). Mr. Stephenson assigned an action to provide this information.

ACTION 4:

Assigned to: MP01/Randy Humphries

Action: Present to Mr. Stephenson the safety benefits of SRB ATVC. Include available quantitative information.

Due Date: 08/22/01

Attendance for Center PMC
August 15, 2001

Name

Organization

COUNCIL MEMBERS

Art Stephenson	DA01
Axel Roth	DE01/VS01
Jim Kennedy	DD01
Bill Kilpatrick	ED01
Ann Whitaker	SD01
Helen Mcconnaughley (for Denny Kross)	TD01
Dave Spacek (for Amanda Goodson)	QS20
Steve Beale	PS01
Bill Hicks	LS01
Tereasa Washington	CD01

OTHERS IN ATTENDANCE

Rich Gladwin (PMC Secretariat)	VS10
Pat McDuffee	VS10
Mel Bryant	MP21
Bill Kahle	ARC
Philip Benefield	MP21
Steve Patterson	RS40
Martin Carson	QS21
Bob McKemie	VS10
Gerald Flanagan	VS10
Jim Carter	AD01
Roger Baird	ED15
Jim Turner	TD60
Dawn Tucker	Mevatec
Roslin Hicks	DA01
David Beals	IPAO